FACT SHEET

Barge Transportation of Used Nuclear Fuel

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Safe transportation always is the primary concern whenever used nuclear fuel is shipped. Used fuel has been transported for almost 40 years, with an exemplary safety record. There have been only eight accidents, four each by rail and truck, with no fatalities, injuries or radiation releases. There have been no accidents with barge shipments.

Radioactive materials occasionally are shipped by barge. Navigable waterways are used in combination with rails and highways, particularly when there is no direct access to a reactor site by rail.

For barge shipment, radioactive materials are placed in the same rugged transportation casks used for rail and truck shipments. These containers are suitable for barge transportation because the Nuclear Regulatory Commission requires that all shipping casks be designed to withstand prolonged submersion in water without any release of radioactivity. The casks are submerged in 200 meters of water for eight hours to ensure they are watertight.

At the departure port, the casks are put on a rail car or truck trailer, which is then secured to the barge.

Barges were used successfully to move used fuel from the Shoreham nuclear plant on Long Island, N.Y., to the Limerick plant in Pennsylvania in 1994. Using two rail containers, 33 shipments were completed safely. The used fuel was first moved by barge from Long Island to Eddystone, Pa., near Philadelphia, then traveled the remaining 40 miles to the Limerick site by rail.

Other types of radioactive materials also have been moved by barge. The reactor pressure vessel from Portland General Electric (PGE) Co.'s Trojan nuclear plant near Rainier, Ore., was moved intact on a barge 270 miles up the Columbia River to a low-level radioactive waste disposal site near Richland, Wash. PGE also used barges to ship Trojan's four large steam generators and a pressurizer to the disposal site in Richland.

Barge routes are included in the comprehensive set of transportation alternatives outlined in the Final Environmental Impact Statement for the repository for used fuel and high-level waste to be built at Yucca Mountain in Nevada.

Although the Department of Energy (DOE) has yet to specify methods or routes for nuclear fuel shipments to a proposed repository in Nevada, barges could provide safe and efficient transportation from a reactor site to the closest available rail line. From there, used fuel would continue to the federal repository by rail. In any case, DOE would continue to coordinate planning and shipments with the appropriate state, local and tribal government agencies.

This fact sheet is also available at http://www.nei.org, *where it is updated periodically.*

NEI
NUCLEAR ENERGY INSTITUTE

SUITE 400
1776 I STREET, NW
WASHINGTON, DC
20006–3708
202.739.8000
www.nei.org